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On the spider fauna (Arachnida: Aranei) of the Altai Republic (Russia)

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Abstract — A list of 96 spider species found in Altai is provided. 17 species are recorded for the Altai Republic for the first time. One of them, *Zelotes helanshan* Tang, Urita, Song & Zhao 1997, was found in Russia for the first time. Species new to Russia, two poorly known species, *Bolyphantes punctulatus* (Holm 1939) and *Xysticus sjostedti* Schenkel 1936, and one of species new to Altai, *Araneus grossus* (C. L. Koch 1844), are illustrated.

Key words — South Siberia, Araneae, new records

Introduction

The Altai Mountains is a system of the highest mountain ranges in Siberia. Altai is located where the borders of Russia, Mongolia, China and Kazakhstan come together. The part of the Altai Mountains within the borders of Russia is called “Russian Altai”. The Russian Altai is located on the territory of six administrative divisions of the Russian Federation: the Altai Province, the Altai Republic, the Kemerovo Region, the Krasnoyarsk Region, the Khakassia Republic and the Tuva Republic (Volynkin 2012). The largest part of the Russian Altai is located within the Altai Republic. Only the Altai Republic spider fauna is discussed in this paper.

Until very recently, the spider fauna of the Altai Republic was one of the most poorly studied in Siberia. In 2009, less than 460 species were known from the Altai Republic (Levina & Mikhailov 2004; Marusik et al. 1996; Marusik et al. 2004; Marusik & Logunov 2009). However, in a recent few years the Altai has become an area of active arachnological research. After the publication of several important faunistical papers dealing with Altai (Azarkina & Trilikauskas 2012, 2013ab; Fomichev & Marusik 2011; Tanasevitch 2013; Trilikauskas 2012, 2013) the number of spider species reported from the Altai Republic has increased to more than 520, and has come much closer to the number of species recorded in the neighboring Tuva (614 species) (Marusik et al. 2000). The goal of the present paper is to provide a list of species from newly collected materials and to comment on species new to the Altai Republic and Russia.

Material and methods

This paper is based on the materials collected by the author in May and July 2012 and April and July 2013, and by S. I. Mishenin in July 2013. Materials were collected in several localities in Altai Republic, at the altitudes from 550 to 3490 m asl. Most of collecting localities are in the southeastern and eastern parts of the Russian Altai. A few points of collecting are located in the northern and central Altai (Map 1). The list of localities and habitats is given below. In the list of collected spiders, each name is followed by a number corresponding to the locality and by a letter corresponding to the habitat in which it was collected (in square brackets). Species new to the Altai Republic are marked with one asterisk (*); new to Russia with two asterisks (**).

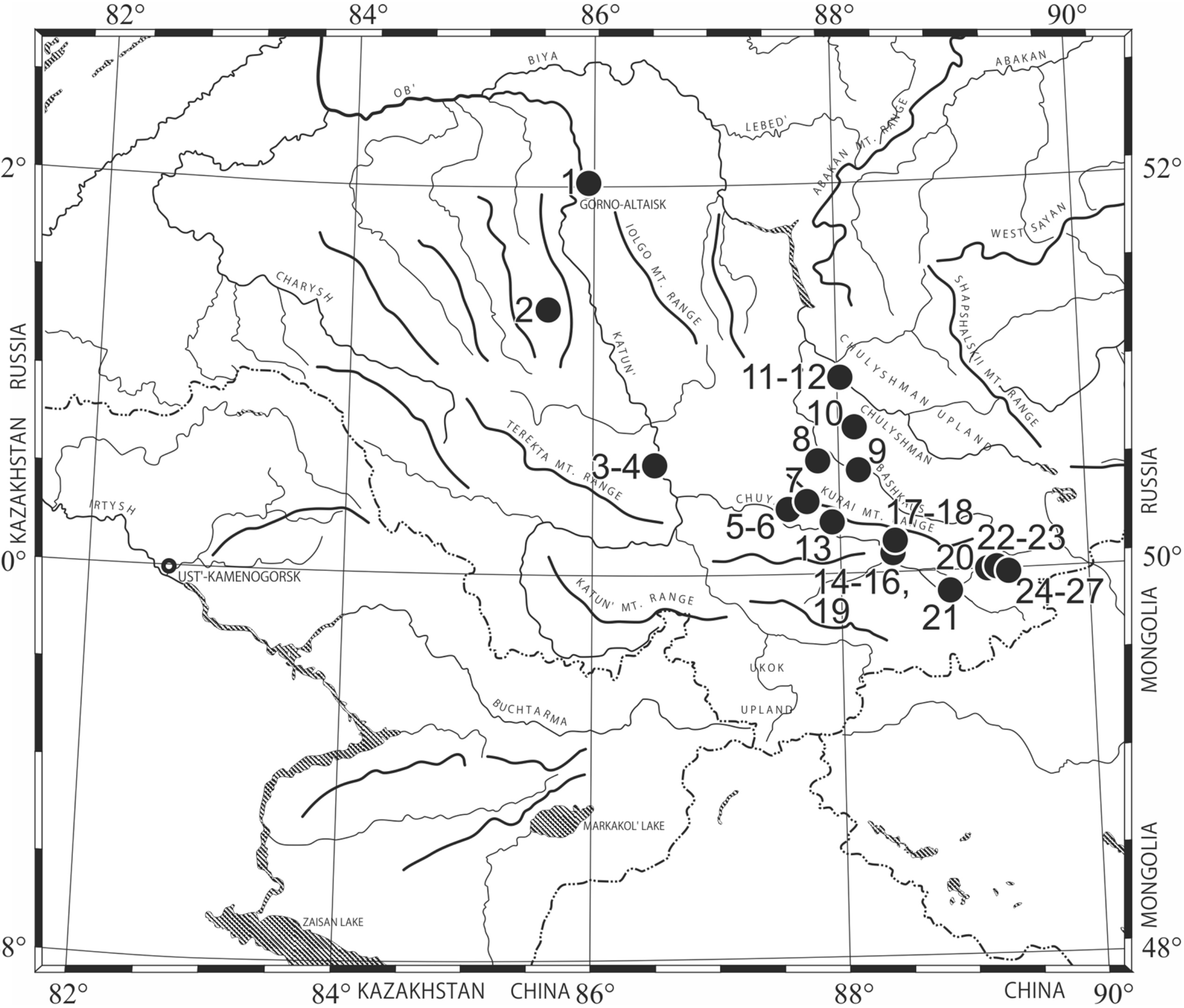
Specimens were photographed in a dish with a paraffin-covered bottom using an AxioCam MRc5 (Zeiss) camera attached to a Stemi 2000 — C stereomicroscope in the Institute of Systematics and Ecology of Animals, Novosibirsk, Russia (ISEA). Digital images were prepared using Helicon Focus 3.10 image stacking software. Epigynes were macerated in KOH-water solution.

Materials will be deposited in the collection of Institute of Systematics and Ecology of Animals, Novosibirsk, Russia (ISEA).

Collectors: AF, A. A. Fomichev; RY, R. V. Yakovlev; SM, S. I. Mishenin.

List of Localities:

(1) Maima District, near Gorno-Altaisk Town, Tugaya Mt. (51°58′N, 85°56′E), 600 m, 21.05.2012, AF.
(2) Shebalino District, Seminskyi Mt. Range, 3–8 km SE from Topuchaya Village, near Sarlyk Mt. (51°05′N, 85°38′E), 1260–1400 m, 13–14.07.2013, AF.
(3) Ongudai District, 4 km NW from Malyi Yaloman Village, Bol’shoi Yaloman River Valley (50°30′N, 86°31′E), 750 m, 21.05.2012, AF.
(4) Same district, same place, 01.07.2013, AF.
(5) Ulagan District, Aigulakskyi Mt. Range, near Aktash Village (50°19′N, 87°36′E), 1400–1600 m, 15–16.04.2013, AF.
(6) Same district, same place, 02.05.2012, AF.
(7) Same district, Kuraiskyi Mt. Range, 10 km ENE from



Map 1. Collecting localities of spiders in the Altai Republic.

Aktash Village (50°20′N, 87°45′E), 2600–2750 m, 10–11.07.2013, AF.

(8) Same district, 8 km SW from Ulagan Village, Kubadry River Valley (50°35′N, 87°52′E), 1295 m, 05–06.07.2013, AF.

(9) Same district, 10 km W from Saratan Village, Bashkaus River Valley (50°32′N, 88°06′E), 1320 m, 08–09.07.2013, AF.

(10) Same district, between Ulagan Village and Katuyaryk Mt. Pass, 08.07.2013, AF & RY.

(11) Same district, Chulyshman River Gorge (51°00′N, 88°01′E), 550–800 m, 06–08.07.2013, AF & RY.

(12) Same district, Kendir River (tributary of Chulyshman River) Gorge (51°00′N, 88°01′E), 550–750 m, 07.07.2013, AF.

(13) Kosh-Agach District, Kuraiskaya Steppe, 5 km NW from Kurai Village (50°14′N, 87°53′E), 1500 m, 01.07.2013, AF.

(14) Same district, 4–6 km ESE from Chagan-Uzun Village (50°05′N, 88°25′E), 1850–2100 m, 23–26.07.2012, AF.

(15) Same district, 4 km SE from Chagan-Uzun Village, Krasnaya Gorka Mt. (50°04′N, 88°24′E), 1800–1900 m, 24.07.2012, AF.

(16) Same district, same place, 11.07.2013, AF.

(17) Same district, Kuraiskyi Mt. Range, near Tydtuyaryk Mt. (50°08′N, 88°27′E), 2900–3300 m, 25.07.2012, AF.

(18) Same district, same place, 12.07.2013, AF.

(19) Same district, Tydtuyaryk River Valley (50°04′N, 88°25′E), 1800–1900 m, 26.07.2012, AF.

(20) Same district, Dzhylkytal Natural Boundary (50°00′N, 89°10′E), 2000 m, 02.07.2013, AF.

(21) Same district, 6 km W from Kokorya Village, Yustyd River Valley (49°54′N, 88°54′E), 1830 m, 05.07.2013, AF&RY.

(22) Same district, Chikhacheva Mt. Range, Talduair massif, foothills of Sailyugem Mt. (50°01′N, 89°14′E), 2250 m, 07.2013, SM.

(23) Same district, same place, 02–05.07.2013, AF.

(24) Same district, Chikhacheva Mt. Range, Talduair massif, Sailyugem Mt. (50°00′N, 89°18′E), 2900–3490 m, 03.07.2013, AF.
(25) Same district, same place (50°00′N, 89°15′E), 2500–2800 m, AF.
(26) Same district, Chikhacheva Mt. Range, Talduair massif, foothills of Talduair Mt. (49°58′N, 89°16′E), 2750 m, 04.07.2013, AF.
(27) Same district, Chikhacheva Mt. Range, Talduair massif, Sailyugem River Valley (50°00′N, 89°15′E), 2180–2580 m, 04.07.2013, AF.

Habitats and collecting methods:
(a) *Larix* forest. Hand picking (implied further if no other collecting method is indicated).
(b) Glade in the *Larix* forest (sweeping and hand picking).
(c) *Picea* forest, under bark on deadwood.
(d) Glade in the *Picea* forest (pitfall traps and hand picking).
(e) Birch forest along the river.
(f) Poplar grove along the river on the bottom of gorge.
(g) *Caragana* thickets (sweeping).
(h) Mountain steppe.
(i) Mountain stony steppe.
(j) Mountain stony semidesert with rocks.
(k) Steppe slope with rocks and screes.
(l) Steppe slope with stony outcrops and rocks.
(m) Crevices in the rocks (collected in the night-time).
(n) Semi desert.
(o) Saline.
(p) Meadow.
(q) Stony steppe meadow on the slope.
(r) Meadow with serried moss cover.
(s) Stony alpine meadow.
(t) Mountain stony tundra.
(u) Scree.
(v) Moraine.
(w) Pebbly river bank.
(x) Grassy swamped river bank with willows (sweeping).
(y) Swamp on the river bank.
(z) Synanthropic habitat.

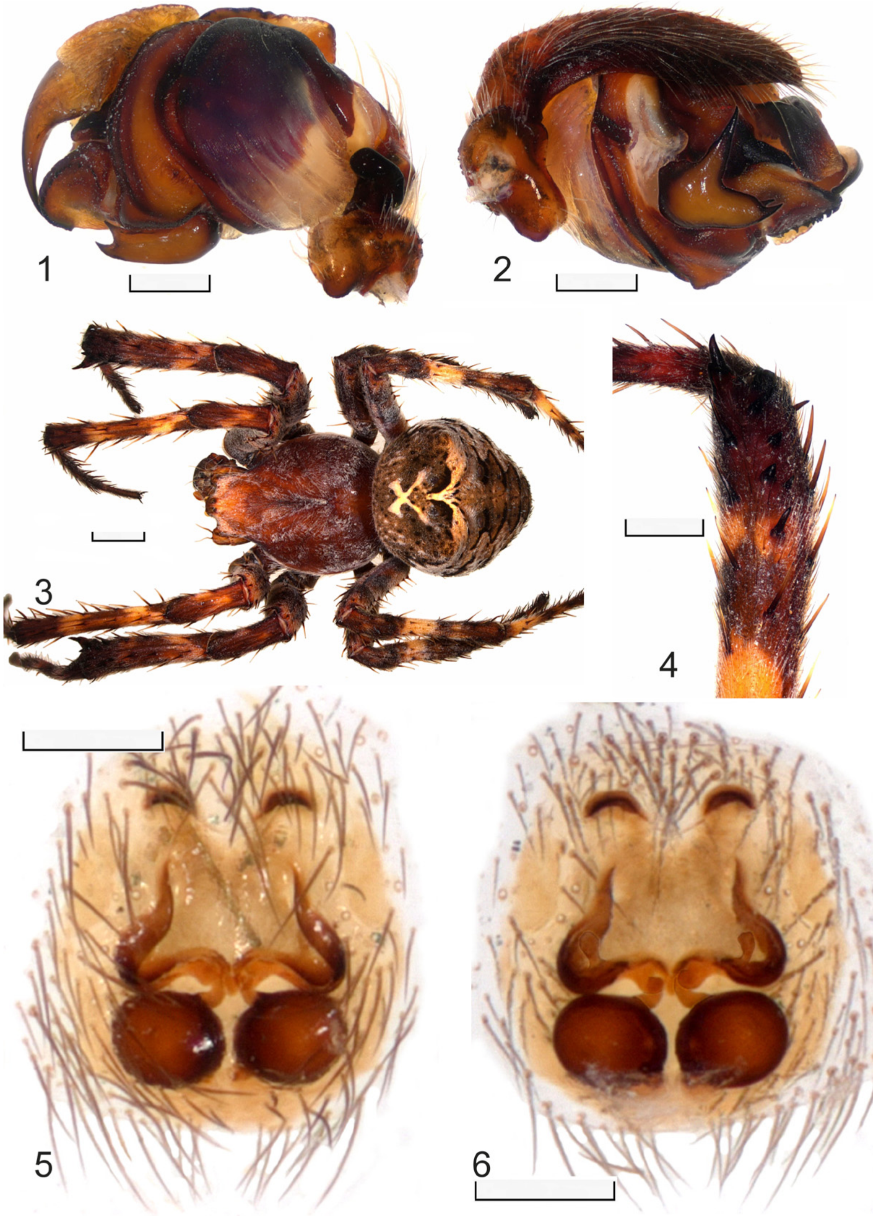
List of species

ARANEIDAE (5 species)
**Araneus grossus* (C. L. Koch 1844): 1♂ [11i].
Comments. Although the species is known from Europe to Central Asia, it was not previously reported from the Altai Republic. Male palp, leg II and habitus as in Figs. 1–4.
Araniella displicata (Hentz 1847): 1♂ [9l], 1♂ 1♀ [10b], 2♀ [11g].
Hypsosinga pygmaea (Sundevall 1831): 2♀ [21x].
Larinioides cornutus (Clerck 1757): 2♂ [21x].
L. patagiatus (Clerck 1757): 1♀ [12f].

CLUBIONIDAE (2 species)
Clubiona pallidula (Clerck 1757): 1♂ [1z], 8♀ [9u].
C. pseudosaxatilis Mikhailov 1992: 2♀ [9w].

DICTYNIDAE (1 species)
Lathys alberta Gertsch 1946: 1♀ [9u], 1♀ [17t], 1♀ [18t], 1♀ [24t], 4♀ [25s], 2♂ 4♀ [26v].

GNAPHOSIDAE (23 species)
Callilepis nocturna (Linnaeus 1758): 1♀ [11l], 1♀ [11i].
Drassodes cupreus (Blackwall 1834): 8♀ [2q], 1♂ [11g], 1♂ 1♀ [22].
D. katunensis Marusik, Hippa & Koponen 1996: 1♀ [6k], 1♀ [11l], 1♂ 4♀ [15j], 2♀ [16j].
D. neglectus (Keyserling 1887): 1♀ [4q], 4♀ [9l], 1♀ [9u], 5♀ [14i], 3♀ [15j], 3♂ 7♀ [22], 1♀ [23i].
D. villosus (Thorell 1856): 1♂ 1♀ [8a].
Drassyllus vinealis (Kulczyński 1897): 1♀ [9l], 2♀ [11l].
**Haplodrassus pugnans* (Simon 1880): 1♀ [9l], 1♀ [22].
Comments. The first record for the Altai Republic. This species has Siberio-Manchurian polyzonal range (Marusik et al. 2000).
H. signifer (C. L. Koch 1839): 1♀ [23w].
Gnaphosa gracilior Kulczyński 1901: 3♀ [9w], 1♀ [13i], 1♀ [22].
**G. licenti* Schenkel 1953: 1♀ [11i].
Comments. The first record for the Altai Republic. This species is known from South Ural to Korea (East Palearctic range) (Marusik et al. 2000).
G. mandschurica Schenkel 1963: 1♀ [2q], 1♂ 1♀ [5k], 1♀ [9l], 1♀ [11l], 1♀ [11i], 1♀ [15j], 2♂ 7♀ [22], 1♂ [23b], 1♀ [23i].
G. montana (L. Koch 1866): 1♀ [2u].
G. muscorum (L. Koch 1866): 1♀ [9c], 1♀ [12f], 1♀ [22], 1♀ [23b], 1♀ [25s].
G. cf. *tuvinica* Marusik & Logunov 1992: 2♀ [15j], 1♀ [16j].
Comments. Marusik & Logunov (2009) reported from the same district (Kosh-Agach District) of Altai an unusually large female of *G. tuvinica* with epigyne that differs from those of the paratypes collected from Tuva. The new collected females are also very large, with an unusual epigynal scape. Perhaps, population from Altai belongs to separate, undescribed species.
**Micaria pulcherrima* Caporiacco 1935: 1♀ [22].
Comments. The species was found in the Altai Republic for the first time. This species has Central Asian boreo-montane range and distributed from the mountains of South Siberia in the north to northern India in the south (Marusik et al. 2000).
M. rossica Thorell 1875: 2♂ 1♀ [22], 1♀ [23w].
Parasyrisca asiatica Ovtsharenko, Platnick & Marusik 1995: 1♀ [15j], 1♂ 1♀ [16j], 4♀ [22], 1♀ [23w].
P. bucklei Marusik & Fomichev 2010: 1♀ [17u], 2♂ 6♀ [18t], 1♀ [27w].
**Poecilochroa variana* (C. L. Koch 1839): 1♀ [2q], 1♀



Figs. 1–6. *Araneus grossus* (1–4) and *Zelotes helanshan* (5–6). 1, left male palp, retrolateral view; 2, same, ventral view; 3, habitus, dorsal view; 4, tibia of right leg II, prolateral view; 5, epigyne, ventral view; 6, same, dorsal view. Scales = 0.5 mm (1–2); 2 mm (3); 1 mm (4); 0.2 mm (5–6).

[11l].

Comments. The species is widely distributed from Europe to Central Asia but recorded from the Altai Republic for the first time.

***Zelotes helanshan* Tang, Urita, Song & Zhao 1997: 1♀ [15j].

Comments. The species is new to Russia. Previously it was found only in Inner Mongolia (China) (Song et al. 1999). The new record represents the northwesternmost locality in its range. Epigyne as in Figs. 5–6.

Z. longipes (L. Koch 1866): 1♂ [11l].

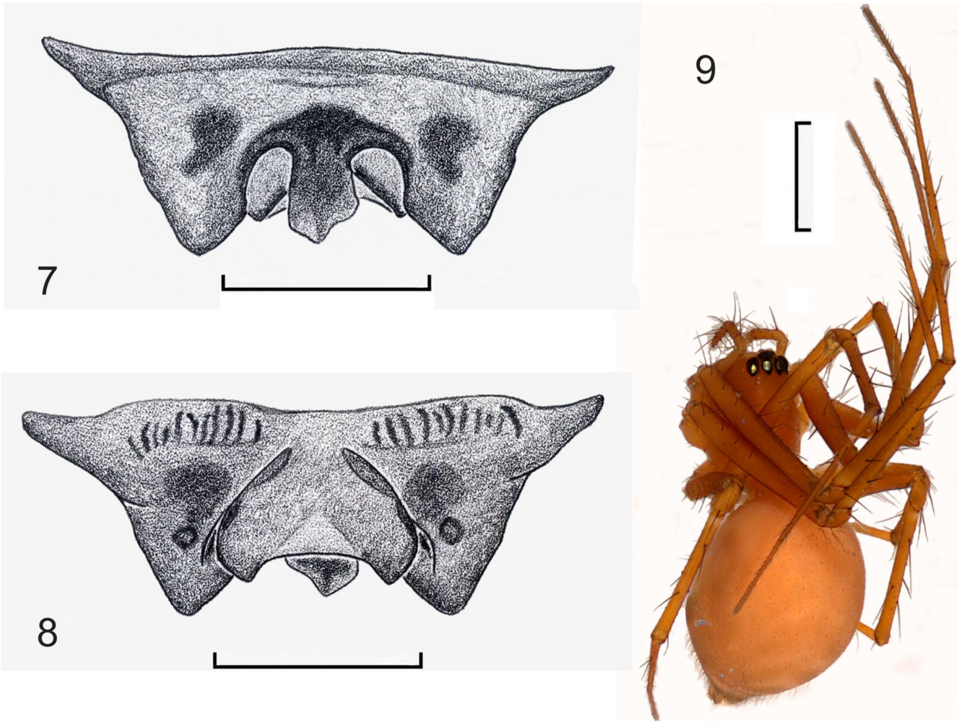
Z. potanini Schenkel 1963: 1♀ [16j].

Z. puritanus Chamberlin 1922: 1♀ [9u].

LINYPHIIDAE (8 species)

**Bolyphantes punctulatus* (Holm 1939) (?): 1♀ [26v].

Comments. The species recorded from Altai Republic for the first time. It has Trans-Palaearctic arcto-alpine range (Marusik & Eskov 2009). This species was described from Lapland (Sweden). In Russia it is known from the Polar and North Urals (Esyunin & Efimik 1996) and northeastern Siberia (Eskov 1994). The new find represents the southernmost locality of its range. There are some doubts about identification of the single female. According to figures in Holm (1945), this



Figs. 7–9. *Bolyphantes punctulatus*. 7, epigyne, ventral view; 8, same, dorsal view; 9, female habitus, dorsal view. Scales = 0.2 mm (7–8); 1 mm (9).

species has more long scapus (which can be broken in the female from Altai). Epigyne and general appearance as in Figs. 7–9.

Incestophantes bonus Tanasevitch 1996: 1♂ [23w].

**Lasiargus pilipes* (Kulczyński 1908): 1♀ [7u].

Comments. This species has Siberian boreal range (Marusik et al. 2000). It was recorded in adjacent East Kazakhstan Region of Kazakhstan (Tanasevitch 2013), but in the Altai Republic it is found for the first time.

Microneta viaria (Blackwall 1841): 1♀ [12f].

Neriene emphana (Walckenaer 1841): 1♂ 2♀ [12f].

N. radiata (Walckenaer 1841): 3♀ [12f].

Poeciloneta petrophila Tanasevitch 1989: 2♂ 2♀ [12f].

Scotinotylus protervus (L. Koch 1879): 6♀ [24t], 3♀ [26v].

LYCOSIDAE (17 species)

Acantholycosa logunovi Marusik, Azarkina & Koponen 2004: 1♂ [7t], 5♂ 3♀ [18t].

A. norvegica (Thorell 1872): 1♂ [9u].

**Alopecosa cursor* (Hahn 1831): 1♂ [6k].

Comments. This species is widely distributed in West Palearctic: from Europe to Western Siberia. Reported from the Altai Republic for the first time. The new record represents the easternmost locality for this species.

A. solivaga (Kulczyński 1901): 1♀ [2q], 1♂ 1♀ [22].

Evippa sibirica Marusik 1995: 1♀ [14i], 1♀ [14n], 2♀ [14o], 1♀ [15j].

Mongolicosa glupovi Marusik, Azarkina & Koponen 2004: 18♂ 12♀ [24t], 4♂ 2♀ [25s], 5♂ 1♀ [26u].

Pardosa agrestis (Westring 1861): 1♂ 1♀ [9d].

P. bifasciata (C. L. Koch 1834): 8♀ [4q], 3♂ 7♀ [9l], 1♀ [9u], 3♂ 2♀ [22], 1♀ [23i].

P. eiseni (Thorell 1875): 1♀ [8a], 1♂ [22].

P. jeniseica Eskov & Marusik 1995: 3♂ 9♀ [9w], 5♂ 4♀ [22], 1♂ 2♀ [23w].

P. lapponica (Thorell 1872): 4♂ 4♀ [22], 1♀ [23w].

P. logunovi Kronestedt & Marusik 2011: 1♂ 1♀ [3e], 3♂ 2♀ [9d], 2♀ [9w], 2♀ [19w], 1♂ [21x], 1♀ [22], 2♂ 1♀ [23w].

P. mongolica Kulczyński 1901: 1♀ [20h], 3♂ 1♀ [22].

P. nenilini Marusik 1995: 2♂ 7♀ [19y].

P. palustris (Linnaeus 1758): 1♀ [2p], 1♂ 1♀ [9d], 1♀ [9w], 1♂ 4♀ [19y].

P. schenkeli Lessert 1904: 1♂ [11w].

P. zyuzini Kronestedt & Marusik 2011: 1♀ [22].

PHILODROMIDAE (9 species)

Artanes marusiki Logunov 1997: 1♀ [5k], 1♀ [5m], 1♀ [16j].

Philodromus cespitum (Walckenaer 1802): 1♂ 1♀ [9d], 3♂ 8♀ [11g], 1♂ 1♀ [11i].

P. emarginatus (Schrank 1803): 1♀ [11g].

**P. mysticus* Dondale & Redner 1975: 1♂ [22].

Comments. This species has the Siberio-Nearctic boreo-montane range (Szita & Logunov 2008). The first record in the Altai Republic represents the westernmost locality in the range.

**P. vinokurovi* Marusik 1991: 1♂ [9d].

Comments. This is the first record of species in the Altai

Republic. It is known from the Siberia (Mikhailov 2013) and from Inner Mongolia in China (Tang et al. 2004).

**P. xerophilus* Szita & Logunov 2008: 1♀ [11g].

Comments. This species is known only from the mountains of South Siberia and the Almaty Region of Kazakhstan (Szita & Logunov 2008). Reported from the Altai Republic for the first time.

Thanatus arcticus Thorell 1872: 1♀ [11l].

T. coloradensis Keyserling 1880: 1♀ [17u], 1♂ [18t], 3♂ 3♀ [22].

T. tuvinensis Logunov 1996: 1♀ [14i], 1♂ [14o], 2♂ 4♀ [15j].

SALTICIDAE (11 species)

**Asianellus ontchalaan* Logunov & Hęciak 1996: 1♂ [22].

Comments. This species has a Mongolian range and is known from East Kazakhstan Region of Kazakhstan to the Tuva Republic (Russia), and south to the Central Aimag in Mongolia (Marusik et al. 2000). Found in the Altai Republic for the first time.

Chalcoscirtus glacialis Caporiacco 1935: 1♀ [17t].

Euophrys uralensis Logunov, Cutler & Marusik 1993: 1♀ [9l], 1♂ [9u], 1♀ [11l].

Heliophanus flavipes (Hahn 1832): 1♀ [10b].

H. patagiatus Thorell 1875: 9♀ [9w], 4♀ [11w], 1♀ [12f].

Pellenes ignifrons (Grube 1861): 1♀ [2u], 1♀ [22].

P. limbatus Kulczyński 1895: 1♂ [9l].

P. logunovi Marusik, Hippa & Koponen 1996: 1♂ [25s].

Philaeus chrysops (Poda 1761): 1♀ [11g].

**Phlegra bicognata* Azarkina 2004 (?): 1♀ [5k].

Comments. The female of this species is almost indistinguishable from this of *P. cinereofasciata* (Simon 1868), which is distributed from Central Europe to the East Caucasus. More likely our specimen belongs to *P. bicognata* because this species distributed from the southern Ukraine to West Siberia (Azarkina 2004). If our identification is correct, this species was recorded in the Altai Republic for the first time and the new record is the easternmost in its range.

Pseudeuophrys obsoleta (Simon 1868): 1♀ [11w], 3♀ [12f].

TETRAGNATHIDAE (2 species)

Tetragnatha extensa (Linnaeus 1758): 2♂ 3♀ [21x].

**Metleucauge dentipalpis* (Kroneberg 1875): 1♀ [12f].

Comments. Central Asian species. Recorded in the Altai Republic for the first time. The new record represents the most northeastern locality in the range.

THERIDIIDAE (6 species)

Enoplognatha cf. *gramineusa* Zhu 1998: 3♀ [11l], 1♀ [15j], 2♀ [22], 3♀ [23i].

Comments. It is a new undescribed species recorded from Altai to Buryatia in Russia, and south to the Omnogovi Aimag of Mongolia (Yu. M. Marusik, pers. comm.).

**Ohlertidion thaleri* (Marusik 1988): 5♀ [26v].

Comments. Recorded in the Altai Republic for the first time. This species known only from two localities in the upper reaches of the Kolyma River (Magadan Region, Russia). The discovering of this species in Altai Mountains represents an interesting faunistic record. The only previously known localities of this species lie at 62°N, 147°E to 149°E which is 12° to the north and 58° to the east from the locality in Altai. This disjunction unlikely can be explained by lack of material from interim regions because of relatively well-studied Tuva Republic, and some areas of Transbaikalia and Yakutia. In Altai, the species prefers cold highlands with moraines partially covered by snow even in summer. Given the range of *O. thaleri*, it can be suggested that it is a glacial relict. Redescription and figures of this species based on newly collected material from Altai will be given in a separate paper, dealing with a survey of *Ohlertidion*.

Phylloneta impressa (L. Koch 1881): 1♀ [11g].

Steatoda albomaculata De Geer 1778: 5♀ [14i], 1♀ [15j], 1♂ 3♀ [22], 1♂ 3♀ [23i].

Theridion sibiricum Marusik 1988: 5♀ [9u], 1♀ [11l], 2♀ [23i].

**Thymoites oleatus* (L. Koch 1879): 3♀ [26v].

Comments. The first record for the Altai Republic. Siberio-Nearctic hypoarctic range (Marusik et al. 2000).

THOMISIDAE (9 species)

Misumena vatia (Clerck 1757): 1♀ [9l].

Synema globosum (Fabricius 1775): 1♀ [11r].

Xysticus audax (Schrank 1803): 1♂ [10b].

X. bonneti Denis 1938: 1♀ [23w], 1♀ [2u], 1♀ [9u], 3♀ [22].

X. dzhungaricus Tyschchenko 1965: 1♂ [11g].

X. emertoni Keyserling 1880: 1♂ [2p], 1♂ [22], 1♂ [23b].

X. mugur Marusik 1990: 1♀ [14i], 2♂ 4♀ [15j], 3♀ [16j], 1♀ [17t].

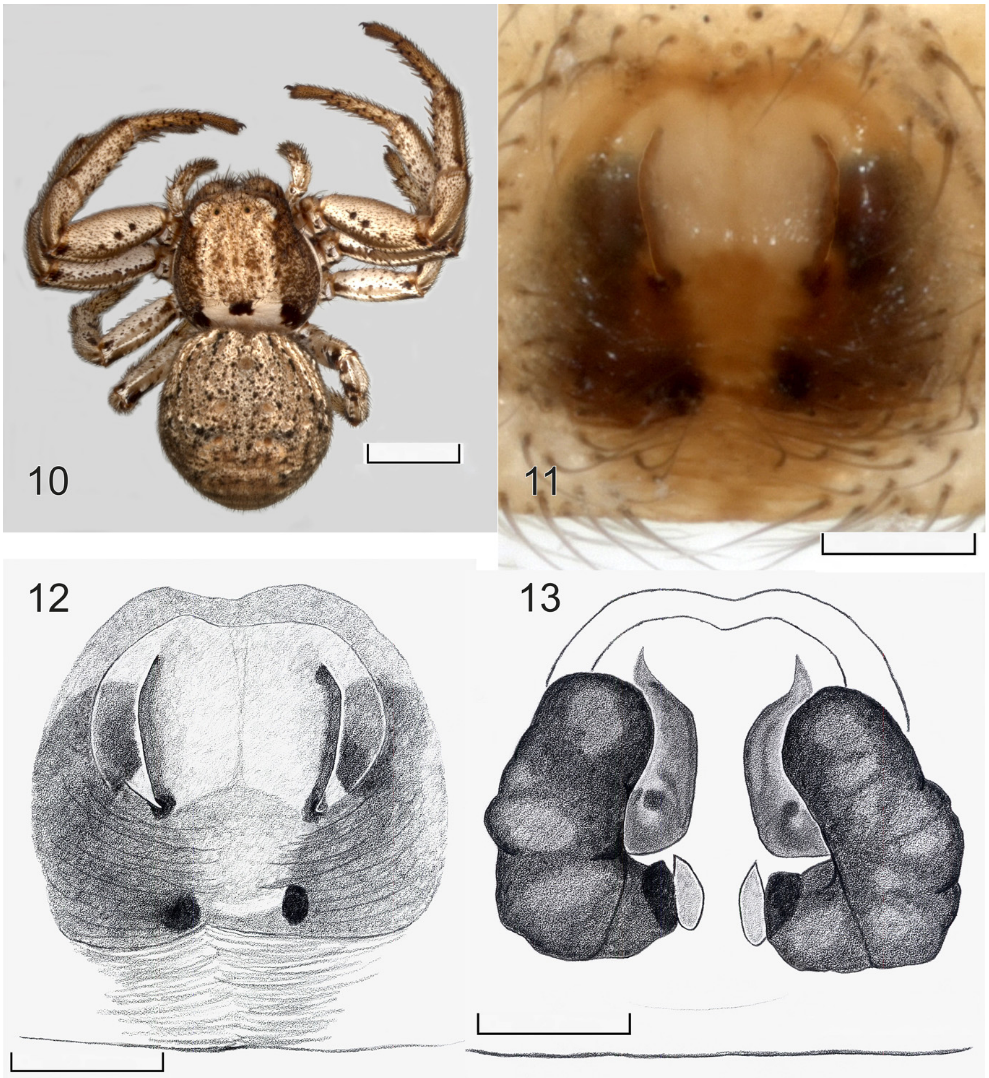
X. nenilini Marusik 1989: 1♀ [23i].

X. sjostedti Schenkel 1936: 2♀ [14i].

Comments. Female of this poorly known species is very similar to these of *X. baltistanus* (Caporiacco 1935) and *X. lehtineni* Fomichev, Marusik & Koponen 2014, and can be easily confused with them (Fomichev et al. 2014). Because of this we provide its figures. *X. sjostedti* can be distinguished from these two close species by a wider, shorter and more flattened epigynal septum. Epigyne and general appearance of female of *X. sjostedti* Schenkel 1936 are as in Figs. 10–13. Species has a Mongolian Range (from the mountains of Southern Siberia through Mongolia to Inner Mongolia, China) (Marusik et al. 2000).

TITANOECIDAE (2 species)

Titanoeca asimilis Song & Zhu 1985: 1♂ 5♀ [9l], 3♀ [11l], 5♂ 7♀ [22], 2♀ [23i].



Figs. 10–13. *Xysticus sjostedti*. 10, female habitus, dorsal view; 11–12, epigyne, ventral view; 13, same, dorsal view. Scales = 2 mm (10); 0.2 mm (11–13).

T. nivalis Simon 1874: 1♂ [3e].

ULOBORIDAE (1 species)
Uloborus walckenaerius Latreille 1806: 2♀ [11l].

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